XSTACK®

Features

+ Handles Over 80,000 I/Os per Second
+ Battery Protected Cache Memory: Up to 4GB
+ System Memory: Up to 512MB
+ 15 Hot-Swap SATA Hard Drive Bays
+ 30TB Capacity with 2TB Hard Drives (Supports higher capacity drives as they are introduced)
+ SATA-II Support
+ 760 Watt Redundant Power Supply
+ Industry Standard 3U 19-inch Chassis

RAID Support

+ 0, 1, 1+0, and 5

High Performance iSCSI Interface

+ DSN-3200: Eight 1GbE Ports
+ DSN-3400: Single 10GbE Port

Storage Network Management

+ IP SAN Device Manager (IDM)
+ Remote Monitoring and Configuration
+ CHAP Authentication Helps Halt Intruders
+ SSL Security to Management Console

WINNER 2006 BEST OF INTEROP Network Computing

xStack Storage® 8x1GbE/1x1GbE iSCSI SAN Arrays

The D-Link® xStack Storage® Area Network (SAN) Arrays (DSN-3200 & DSN-3400) provide a reliable network data storage solution for customers in entry-level and SMB segments. Utilizing a 10Gbit iSCSI System-on-a-Chip (SoC) solution that can handle over 80,000 I/Os per second and capable of supporting 30TB raw capacity using 2TB hard drives (and even higher capacity hard drives as they are introduced), the DSN-3000 Arrays can easily be implemented as nearline storage to supplement your primary IP network storage solution or used as a basic backup and recovery device. This evolutionary advancement in performance is a testament to the tightly integrated xStack Storage architecture and is a sharp contrast to the discrete implementation of competing products.

System-on-a-Chip (SoC) Implementation

By utilizing a SoC design, the DSN-3000 Series SAN Arrays combine both networking and storage functions into a single specialized Application Specific Integrated Circuit (ASIC). The SoC solution combines 10Gbps iSCSI, TCP & IP offload, embedded processors, and a storage virtualization firmware stack onto a single chip. The tight integration of these functions eliminates interoperability, timing, and support issues found in competitive products that offer "discrete implementation" wherein a chassis, a main motherboard, a RAID storage controller, iSCSI software or controller, network interface cards, and operating system software are picked separately and then assembled. The DSN-3000 line outperforms these discrete implementations and does so at a lower price point, while delivering mission critical data quickly with state-of-the-art reliability.

iSCSI for IP Networks

SAN has been traditionally reserved for Fibre Channel networks until the recent introduction of iSCSI extended this powerful yet simple centralized backend (behind server-based) storage system to IP networks. By utilizing existing Ethernet technology, the cost associated with separate host bus adapters and the per-Gigabyte cost for storage is significantly reduced. IP SANs based on iSCSI technology can leverage existing and familiar Ethernet standards to provide speeds of up to 1160 MB/s bandwidth (DSN-3400).

RAID for Efficiency

The DSN-3000 Series SAN Array platform features 15 hot swappable Serial ATA (SATA) disk drive bays supporting 30TB raw capacity using 2TB hard drives (and even higher capacity hard drives as they are introduced) in RAID level 0, 1, 1+0 and 5 configurations. You can quickly deploy a SAN using inexpensive SATA disk drives, and depending on your growing storage needs, you can simply add more drives as you go.

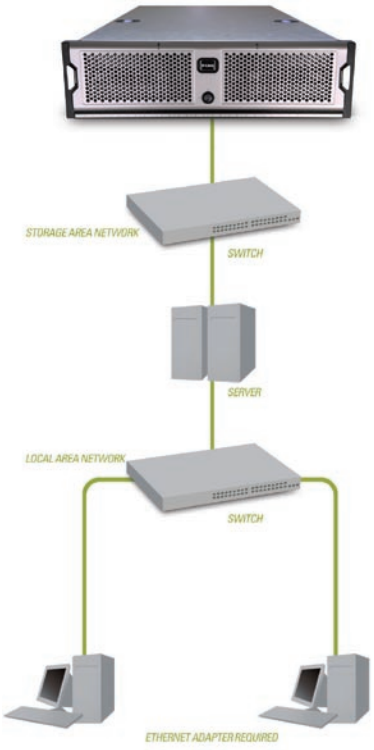
A Choice of Host Interfaces – 1GbE or 10GbE

The DSN-3200 implements eight 1GbE ports and supports IEEE 802.3ad Link Aggregation Groups (LAG) for full offload capability so that all eight ports can be grouped together, totaling up to 850MB/s bandwidth, for increased throughput and redundancy.

The DSN-3400 implements the industry's first built-in, fully integrated 10GbE interface in the XStack Storage cost effective solution. Providing up to 1160MB/s bandwidth, it offers a high performance alternative to 4Gbps Fibre Channel.

Embedded Centralized Storage Management

The embedded, user-friendly IP-SAN Device Manager (IDM) provides comprehensive network storage management. Boasting a rich set of management features, this suite of utilities allows monitoring and control of your SAN via the SMI-S (Storage Management Initiative) command set. Combined with an embedded secure server, users will be able to remotely configure and monitor their SAN storage subsystems.



xStack Storage® 8x1GbE/1x1GbE iSCSI SAN Arrays

Advanced Management Features

The DSN-3000 Series provides additional advanced features for efficient management of network storage and optimal performance.

Cache Management provides adaptive and persistent cache management. This provides write-back, write-through, write coalescing and multi-stream read-ahead on a volume basis, optimizing cache utilization and performance in an application-dependent manner.

VLAN Zoning supports IEEE 802.1q VLAN tagging to segregate traffic into isolated zones for secure access and jumbo frames, improving network throughput and reducing CPU overhead.

Volume Virtualization utilizes the concept of storage Extents. Extents are the fundamental building blocks used to enable features such as RAID, online capacity expansion and volume migration. Drives of disimilar size can be used to create volumes. Growth can occur without volume migration or reconstruction. Single drives can contain multiple and divergent RAID technologies. Volume structure can also provide infrastructure for Snapshot copies.

RAID Support for RAID Levels 0, 1, 1+0 and 5 (striped sets, mirrored sets, striped mirrored sets, and parity sets) allows for different storage options.

Online Capacity Expansion and RAID Level Migration is performed online with minimal impact on users. For example, a mirror volume of two drives can easily be converted to a parity volume of three or more drives while users continue to access this storage.

Micro Rebuilds provide protection against unresponsive SATA commands by forcing a response within a preset time limit.

Whether you are looking for a low-cost block-based solution for data backup and recovery, replacement of some of your inefficient Direct-Attached Storage (DAS) drives, or cost-effective centralized storage for your servers, the DSN-3000 Series has a solution for you.

Technical Specifications

Model	DSN-3200	DSN-3400
Features		
Drive Bays	15	15
Drive Interface Support	SATA-II support	SATA-II support
System Memory	256MB to 512MB (512MB standard)	256MB to 512MB (512MB standard)
Cache Memory	256MB to 4GB (512MB standard)	256MB to 4GB (512MB standard)
Battery Backup for Cache	Standard (approximately 72 hours on full charge)	Standard (approximately 72 hours on full charge)
Bandwidth	Up to 850Mbytes per second	Up to 1,160Mbytes per second
Storage Capacity	30TB Capacity with 2TB Hard Drives (supports higher capacity drives as they are introduced)	30TB Capacity with 2TB Hard Drives (supports higher capacity drives as they are introduced)
Operating Systems Supported Please see support.dlink.com for latest support information	Windows Vista® 32-bit & x64 (Ultimate & Enterprise) w/Built-in iSCSI initiator	Windows Vista 32-bit & x64 (Ultimate & Enterprise) w/Built-in iSCSI initiator
	Windows Server® 2003 32-bit & x64 SP1 (Standard & Enterprise) w/v2.07 iSCSI initiator	Windows Server 2003 32-bit & x64 SP1 (Standard & Enterprise) w/v2.07 iSCSI initiator
	Windows Server 2003 R2 32-bit & x64 (Standard & Enterprise) w/v2.07 iSCSI initiator	Windows Server 2003 R2 32-bit & x64 (Standard & Enterprise) w/v2.07 iSCSI initiator
	Windows® XP Pro 32-bit & x64 w/v2.07 iSCSI initiator	Windows XP Pro 32-bit & x64 w/v2.07 iSCSI initiator
	Windows 2000 Advanced Server w/v1.6 & v2.01 iSCSI initiator	Windows 2000 Advanced Server w/v1.6 & v2.01 iSCSI initiator
	Red Hat® 7.3	Red Hat 7.3

xStack Storage® 8x1GbE/1x1GbE iSCSI SAN Arrays

Model	DSN-3200	DSN-3400
Operating Systems Supported (Cont.) Please see support.dlink.com for latest support information	Red Hat Enterprise AS update 5	Red Hat Enterprise AS update 5
	SuSE® Professional 9.3 32-bit & x64	SuSE Professional 9.3 32-bit & x64
	SuSE Enterprise Server 10.2 32-bit (x86)	SuSE Enterprise Server 10.2 32-bit (x86)
	Mac OS X (10.4 & 10.5)	Mac OS X (10.4 & 10.5)
Supported NICs, iSCSI Accelerators and iSCSI HBAs Please see support.dlink.com for latest support information	Intel® Pro 1000MT & XT [1GbE]	Intel Pro 1000MT & XT [1GbE]
	Intel Pro 10000 CX4 [10GbE]	Intel Pro 10000 CX4 [10GbE]
	Myricom 10G-PCIE-8A-C+E [10GbE]	Myricom 10G-PCIE-8A-C+E [10GbE]
	Chelsio® S310X-SR-XFP [10GbE]	Chelsio® S310X-SR-XFP [10GbE]
	Neterion® Xframe® II & Xframe E [10GbE]	Neterion Xframe II & Xframe E [10GbE]
	Alacritech® SES2104ET (drivers: SNP 9.1.0.1092 & 7.3.1.0)	Alacritech SES2104ET (drivers: SNP 9.1.0.1092 & 7.3.1.0)
	Alacritech SES2102ET (drivers: SNP 9.1.0.1092 & 7.3.1.0)	Alacritech SES2102ET (drivers: SNP 9.1.0.1092 & 7.3.1.0)
	QLogic® 4010C, 4052C, & 4062C	QLogic® 4010C, 4052C, & 4062C
iSCSI Network Interface		
iSCSI Network Interface	Eight 1GbE Copper	One 10GbE (XFP Copper or Fiber sold separately)
Host Interface	iSCSI Draft 20 compliant initiator	iSCSI Draft 20 compliant initiator
Connections	1,024 hosts	1,024 hosts
CHAP Authentication	Yes	Yes
Access Control of Management	Yes	Yes
iSCSI/TCP/IP Full HW Offload	Yes	Yes
Jumbo Frames Support	Yes	Yes
LAG Support (Link Aggregation)	Up to eight LAGs (IEEE802.3ad Link Aggregation Group)	Not Applicable
VLAN Support	Up to eight 1-to-1 mapping between IP subnet and VLAN. Multiple VLANs per physical port with VLAN tag. All physical ports in LAG belong to same VLAN (IEEE802.1Q Tag)	Up to eight 1-to-1 mapping between IP subnet and VLAN. Multiple VLANs per physical port with VLAN tag (IEEE802.1Q Tag)
Volume & RAID Support		
RAID Controller	Single- Integrated in ASIC	Single- Integrated in ASIC
RAID Support	RAID Levels 0, 1, 1+0 and 5	RAID Levels 0, 1, 1+0 and 5
	(Striped sets, mirrored sets, striped mirrored sets and parity sets)	(Striped sets, mirrored sets, striped mirrored sets and parity sets)
Volumes	1,024 Virtual Volumes (256 accessible per initiator)	1,024 Virtual Volumes (256 accessible per initiator)
Target Nodes	1,024	1,024
Online Capacity Expansion	Yes	Yes
Hot Swappable Drives	Yes	Yes
Instant Volume Access	Yes	Yes
Free Space Defragmentation	Yes	Yes
Auto-Detection Failed Drive	Yes	Yes

xStack Storage® 8x1GbE/1x1GbE iSCSI SAN Arrays

Model		DSN-3200	DSN-3400
	Auto-Rebuild Spare Drive	Yes	Yes
	RAID Level Migration	Yes	Yes
	Drive Roaming in Power Off (configured drives are not bay-specific)	Yes	Yes
	Micro Rebuilds	Yes	Yes
Storage Management			
	Embedded IP-Based Management GUI	Create, manage, expand and monitor storage pool, volumes and RAID.	Create, manage, expand and monitor storage pool, volumes and RAID.
		Event manager to view and persist events.	Event manager to view and persist events.
	Firmware Field Upgradeable	Yes	Yes
	SMI-S Version 1.1	Yes	Yes
Power			
	Supply Type	Redundant 3U 2+1 760 Watt	Redundant 3U 2+1 760 Watt
	Input Voltage	90-264 VAC (auto-switching)	90-264 VAC (auto-switching)
	Input Frequency	47-63 Hz	47-63 Hz
	Input Current	20A Maximum at 90VAC and 10A Maximum at 264VAC (maximum amps vs. voltage varies linearly throughout this voltage range)	20A Maximum at 90VAC and 10A Maximum at 264VAC (maximum amps vs. voltage varies linearly throughout this voltage range)
	Power Factor Correction	95%@110V, Full load	95%@110V, Full load
	Power Consumption	570W (full configuration)	570W (full configuration)
	Thermal	2000 BTU / hour (full configuration)	2000 BTU / hour (full configuration)
Environmental			
	Operating Temperature	32° to 104°F (0° to 40°C)	32° to 104°F (0° to 40°C)
	Storage Temperature	-4° to 158°F (-20° to 70°C)	-4° to 158°F (-20° to 70°C)
	Operating Humidity	20% ~ 90% (Non-condensing)	20% ~ 90% (Non-condensing)
	Storage Humidity	10% ~ 95% (Non-condensing)	10% ~ 95% (Non-condensing)
Physical (approximate)			
	Form Factor	3U industry-standard 19-inch rack	3U industry-standard 19-inch rack
	Dimensions (W x D x H)	17.2in x 22.5in x 5.2in (438mm x 571mm x 133mm)	17.2in x 22.5in x 5.2in (438mm x 571mm x 133mm)
	Weight	72.8 pounds / 33 kilograms (full configuration)	72.8 pounds / 33 kilograms (full configuration)
International Approvals			
	Emissions	CE Class A, FCC Class A, C-Tick Class A, VCCI Class A	CE Class A, FCC Class A, C-Tick Class A, VCCI Class A
	Safety	CSA 60950-1, UL60950-1, IEC 60950-1, EN 60950-1	CSA 60950-1, UL60950-1, IEC 60950-1, EN 60950-1

xStack Storage® 8x1GbE/1x1GbE iSCSI SAN Arrays

Model	DSN-3200	DSN-3400
Warranty and Support		
Warranty	3 year limited[1]	3 year limited[1]
Extended Warranty	Available	Available
Support	1 year (9 hours per day / 5 days per week Technical Support)	1 year (9 hours per day / 5 days per week Technical Support)

Ordering Information

Part Number	*Description*
DSN-3200-10	xStack 8x1GbE iSCSI SAN Array, 15 Bays, 3U, w/o Drives, with Trays
DSN-3400-10	xStack 1x10GbE iSCSI SAN Array, 15 Bays, 3U, w/o Drives, with Trays
DSN-210-SW	SureSync Replication & Synchronization Software
DSN-030	Power Supply Module for DSN-2100/3200/3400
DSN-040	Chassis Fan Module for DSN-2100/3200/3400
DNS-050	Lithium-Ion Battery for DSN-2100/3200/3400
DSN-3200-10-LW	Extended Warranty for DSN-3200-10
DSN-3400-10-LW	Extended Warranty for DSN-3400-10

Updated 02/22/10

[1] Available in the U.S.A and Canada only.

All references to speed are for comparison purposes only. Product specifications, size and shape are subject to change without notice, and actual product appearance may differ from that depicted. See inside package for warranty details.

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